

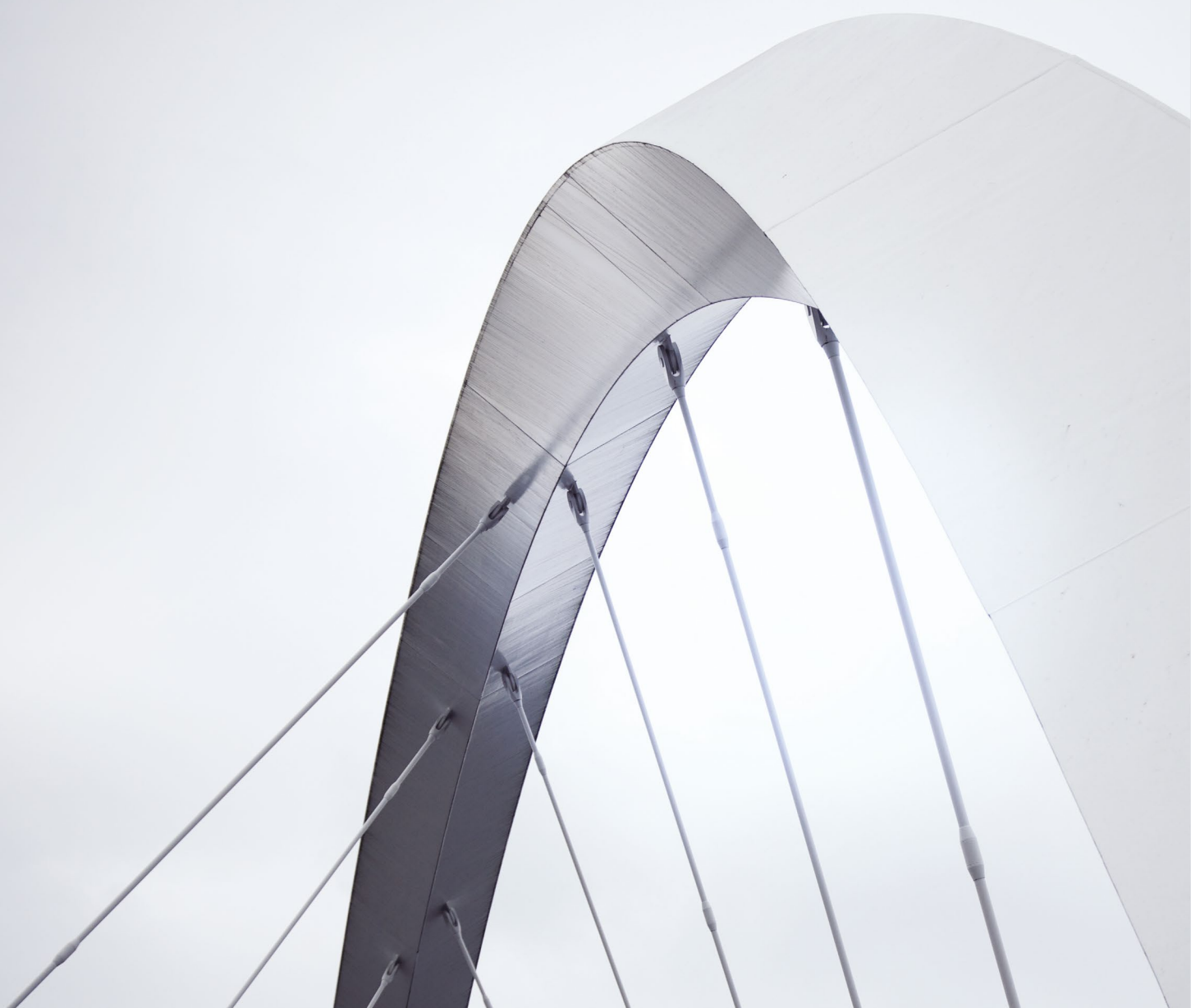


An evaluation of Global Management Accounting Principles

in the sustainability of a mechanised piggery

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Key conclusions

- ▶ All commercial farming operations should consider GMAPs as a tool to establish best practice in the support of decision-making that promotes sustainability of farming operations
- ▶ Despite the presence of principles of GMAPs in Piggery A, Piggery A was unable to continue to compete against factors in the external environment within which it was operating. Employing GMAPs will therefore not guarantee success of the business, but will support sound business decision-making.
- ▶ The study discovered that the most basic need of Piggery A, in terms of management accounting, was the production of management information in a decision-useful way. Therefore, the most important principles of GMAPs for Piggery A would be: "information is relevant" and "impact on value is analysed", followed closely by "Communication provides insight that is influential".

Abstract

The aim of this study was to evaluate the relevance of Global Management Accounting Principles (GMAPs) in the sustainability of a mechanised piggery in a South African context. The agricultural industry globally, but specifically in South Africa, is facing many influential factors over which little or no control can be exerted. These influential factors or complexities have an impact on sustainability of commercial farming operations. In 2014, the Association of International Certified Professional Accountants (The Association) published the first set of GMAPs to provide guidance on best practice for management accounting functions (CIMA & AICPA, 2014). A case study was undertaken to explore the appropriateness of GMAPs in the context of a commercial farming operation in the form of a mechanised pork production operation, Piggery A.

Business sustainability was the lens through which GMAPs were evaluated in the case of Piggery A. The findings include that, without pre-knowledge of GMAPs, Piggery A employed a large number of the concepts and principles described by GMAPs as best practice. Combined with the assessment that the farming operation itself was physically sustainable, it could be concluded that GMAPs assisted with the sustainability of Piggery A and the decision-making processes of Owner-A. The recommendations include that all commercial farming operations should consider GMAPs as a tool to establish best practice in the support of decision-making that promotes sustainability of farming operations.

Overview of the project

Commercial farming forms the backbone of food security in most countries, especially in South Africa. Moreover, it is evident that agriculture is still an important source of employment in the South African economy, where more than 5% of total employment is provided within the agricultural, hunting, forestry and fishing sectors (DAFF, 2015).

The agricultural industry globally, but specifically in South Africa, is besieged by complexities which include matters of i) mechanisation (Saayman & Middelberg, 2014; Gan-Mor et al., 2007); ii) taxation (Darroch et al., 2008); iii) political influences (Agri SA, 2015; Anon, 2015a; Anon, 2015b; Anon, 2015c; Mokhema, 2015; Nkosi, 2015) and iv) market related forces (Anon, 2015a; Anon, 2015b; Anon, 2015c; Hamilton, 2006).

Commercial farmers are facing many influential factors over which they can exert little or no control. The sustainability of commercial farming in South Africa requires a fresh look at available tools to steer farming through uncertainty and instability. Farming operations, as any other business, should be able to master the skill of sound financial management to ensure sustainability of the operation. Management accounting is concerned with the supply of information to support or assist sound business decision-making (Seal et al., 2012; Needles & Crosson, 2011) and is therefore directly linked to sound financial management and business decision-making.

The importance of sound business decision-making was recently highlighted by The Association: "Quality decision-making has never been more important – or more difficult" (CIMA & AICPA, 2014). The Association is a partnership between the American Institute of CPAs and the Chartered Institute of Management Accountants (CIMA) and forms the largest body of management accountants globally (CIMA & AICPA, 2014). The Association published the first set of Global Management Accounting Principles© (GMAPs).

GMAPs describe the constituents of an effective management accounting function to include competent people, clear principles and well-managed performance applied across 14 practice areas (CIMA, 2015).

As management accounting principles in the form of GMAPs are relevant in support of sound business decision-making, so is the production of pork on a commercial scale – since the production of pork grew more than 360% in South Africa over the last 10 years (DAFF, 2015), compared to the 281% of the larger animal production segment of the industry. The combining of these two relevant topics against the backdrop of the larger environment in which agriculture operates, lead to the problem statement of the study.

Considering the pressure which commercial agriculture in South Africa is experiencing, as well as the growing nature of pork production in this sector, mechanised piggeries would have to consider ways in which to manage their operations in order to remain sustainable. The primary research problem to be considered was therefore:

Would management accounting principles, encapsulated by the newly published GMAPs, assist with the sustainability of a mechanised piggery in South Africa?

The object of the study was a commercial farming operation in South Africa that had a focus on pork production, Piggery A. Piggery A was part of a larger sole proprietor type business entity, managed and owned by Owner-A.

Owner-A bought the farm, on which Piggery A was situated, on 6 March 1968. This was also the year when the first pig stead was raised.

The farming operation of Piggery A was established within a diverse farming operation which ranged from the planting and harvesting of maize to that of peanuts, amongst others. It was only after Owner-A started researching and applying scientific farming practices that the land yielded increased returns. This enabled the farming operation to grow.

The piggery was built using scientific principles to ensure optimum health of the sows and the “baconers”, which are the pigs that form the output of a pork production operation. The diverse farming operation grew and was extended with cattle farming in 1974 and a dairy in 1982. Growth came with the procurement of additional farms in the area where the cattle farming continued and the dairy was raised. In 1998 Owner-A started with a process of what is generally known as biological farming, using a natural variant of maize. Biological farming is also referred to as organic farming (Mäder et al., 2000).

Objectives

The objectives of the research were the following:

- ▶ The main objective was to evaluate the relevance of GMAPs in the sustainability of a mechanised piggery.
- ▶ The secondary objective was to establish the basic management accounting need and the corresponding GMAPs of the commercial piggery in order to prioritise the deployment of GMAPs from Piggery A's perspective.



Results and their implications

Introduction

This study highlighted that research in the field of management accounting is dominated by the application and evaluation of complex cost allocation systems such as ABC, with studies investigating such systems within the agricultural sector. Problems were, however, experienced with the implementation and maintenance of ABC, which lead to the conclusion that businesses should take a step back and first look at applying the basics correctly before embarking on implementing complex cost allocation systems such as ABC.

The agricultural sector in South Africa finds itself at a pinnacle point, facing major obstacles. It was therefore appropriate to argue that commercial agriculture needs a new tool to assist operations in navigating the complexity of today's economic circumstances. GMAPs are proposed as a solution to this phenomenon. Combined with the challenges facing the agricultural sector, the fact that no research on the applicability of GMAPs had been done on the sector before, it was found fitting to explore the appropriateness of GMAPs for the agricultural sector by means of a single case, studied in depth against the context of the sector and the business form of the specific case. Interviews and observations of the operational elements of the case, Piggery A, provided rich qualitative data that was considered sufficient to saturate the needs of the project.

The semi-structured interviews conducted at Piggery A were designed around the diagnostic checklist for GMAPs that was published in 2015 by CIMA and AICPA (2015). All three sections of the diagnostic checklist for GMAPs were answered. During the interviews, follow up questions were posed by the researcher to "crystallise" certain answers from Owner-A on the diagnostic checklist.

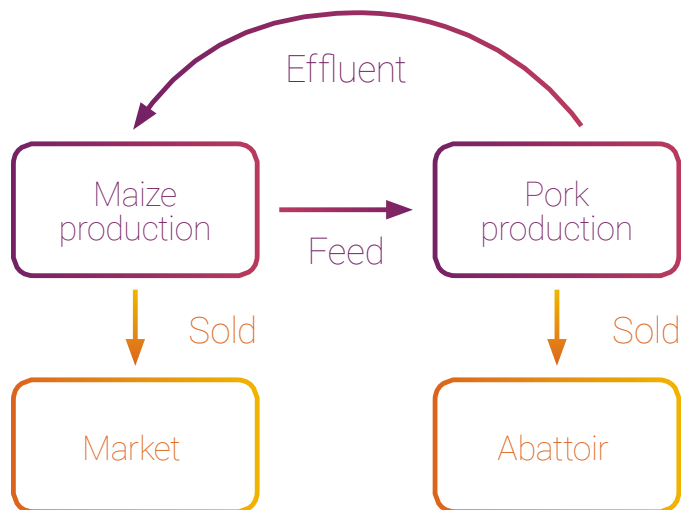
Some answers lead to further questions which brought the discovery of some surprising elements to the fore, such as the motivation for the decision to discontinue pork production at Piggery A.

This exploratory research case study revealed that GMAPs had a surprisingly strong presence within Piggery A, without any of the key stakeholders having prior knowledge thereof. This discovery lead to the conclusion that, if GMAPs can be practised in a sole proprietor farming operation, it can also be practised within more complex farming operations within legal entity business forms, such as companies.

Owner-A realised, at the early stages of the farming operation, that management information is crucial to a successful farming operation and furthermore that management information is not limited to financial information. Access to the management information utilised by the farming operation was given to the researcher.

The information included, amongst many others, soil content analysis and maize-leaf analysis to ascertain the needs of the plants and farm as scientific as possible, as well as the weight of feed that each sow consumed each day. These analyses translate into remedying actions to be taken in the form of additives, such as agriculture lime or "soft" phosphates to be provided to the soil, or feed mixes to be amended to optimise the consumption-to-production ratio.

Figure 1: Farming operation of Piggery A. Source: Research findings



Defining business sustainability

Defining business sustainability was important for the study to provide a tool with which to measure the appropriateness of GMAPs in the context of Piggery A. The concept of sustainability was made famous by Brundtland (1989) in her speech addressing climate change. According to Dignen (2000), sustainability stems from the word sustain, which means to manage to make something continue to exist over a long period of time.

CIMA et al. (2013) cited that research has found that businesses are placing more emphasis on sustainability, because it: i) has a positive effect on their profitability; ii) improves employee engagement and participation, and iii) positively affects the establishment of relationships with suppliers and customers. Ten key elements within three broad categories were described in their publication, which focused on long-term, forward looking practices (CIMA et al., 2013) to keep organisations going for future generations.

This agrees with the definition of sustainability according to Dignen (2000).

The King Committee (2009) defined sustainability by citing principles from the reformed United Kingdom corporate legislation. In their opinion, sustainability is concerned with: taking an appropriate long-term perspective; actively building successful relationships with employees and those in the supply chain; and lastly taking the responsibility towards ethical practices - and their impact on social and environmental aspects of society - seriously (King Committee, 2009).

Business sustainability can therefore be defined as the management process of taking a long-term, forward-looking perspective, actively building stronger relationships with the various stakeholders to ensure that the business continues to exist for future generations.

Summary of findings

Keeping the definition of sustainability in mind, it can be concluded that the 48-year old farming operation has been operating sustainably, from a financial perspective. If one observes the farming technologies and practices employed, it could reasonably be argued that these practices contribute to sustainable farming. The integration of the various farming activities and the recycling of waste products in a sustainable manner support this notion.

Regardless of the fact that Owner-A decided to discontinue pork production at Piggery A, GMAPs were evaluated as being supportive to the sustainability of Piggery A, having operated since 1968 and utilising principles described by GMAPs. It supports a recommendation that GMAPs should be considered as a tool for establishing best practice in commercial farming operations, given its wide applicability.

From the results it is evident that, without pre-knowledge of the content of GMAPs, Piggery A had indeed employed a large number of the concepts and principles that are described by GMAPs as best practice. The farming operation was assessed as being sustainable, given its integrated operating activities and completing a circle which can be sustained physically. The descriptions of a number of principles were found not to be applicable to the business-form in which Piggery A operates. However, the underlying principles, such as the assessment of internal controls with the internal audit function, could be adopted in an informal approach to further add value to the farming operation.

Despite the strong presence of principles of GMAPs in Piggery A, external factors such as the economic trade agreement with the USA's subsidised produce market, the presence of mega producing competitors in the South African market, the persistence of Piggery A's operating losses and South Africa's bleak economic outlook informed Owner-A to discontinue the production of pork over a period of time.

The decision to divest from the piggery operation has been unexpected, given the observation of sound business principles evident by the presence of GMAPs in the farming operation. The conclusion can therefore be made that GMAPs would, at best, have provided the platform for Owner-A to make an informed decision regarding continuation of the operation of Piggery A. Since the principles that were observed as being present in the farming operation were not assessed in terms of quality or scope, the question would arise as to the extent that GMAPs could have informed the decision to discontinue the production of pork at an earlier date to limit the losses made over the last three years. Another question would be whether GMAPs would have provided guidance to Owner-A in terms of alternative options to replace the loss of cash generation capability through diversification, such as the acquisition of a herd of sheep for the production of lamb, or the acquisition of a herd of cattle for beef production. Perhaps the answers to both questions could have been positive, had the principles been deployed throughout the farming operation and if all key stakeholders of the farming operation were actively involved in practising the principles.

The study discovered that the most basic need of Piggery A in terms of management accounting is the production of management information in a decision-useful way. This is seen with the information which Owner-A reviewed on a monthly basis, which included financial and non-financial information that was produced by various internal stakeholders of the farming operation. Therefore, the most important principles of GMAPs (refer section 2, page 3) for Piggery A is “information is relevant” and “impact on value is analysed”, followed closely by “Communication provides insight that is influential”. Furthermore, the information that is gathered by the internal stakeholders must be analysed and presented in similar fashion as is currently the practice, in order to provide for a platform to communicate with external stakeholders such as the banker and abattoirs. There is, however, no doubt that the “Stewardship builds trust” principle remains the foundation for the above three principles, since Owner-A had to trust that the information produced by other stakeholders was accurate and reliable.

Concluding comments

The main objective of the study was to evaluate GMAPs in the sustainability of Piggery A.

It was discovered that Piggery A had been operating since 1968 and was applying practices that could be argued to have contributed towards a sustainable commercial farming operation, within which Piggery A fitted into, to this day. It was also discovered that Piggery A was operated without debt until as recently as 2013. Owner-A considered this to be a real measure of success which also alluded to his financial risk appetite being low. The conclusion was therefore made that Piggery A had been operating sustainably for 48 years. It was established through the use of the diagnostic checklist and a process of “crystallisation” that Piggery A engaged in a large number of principles and practices measured with the diagnostic checklist. During the interview, it was discovered that Owner-A took four main factors into consideration when making a decision to discontinue pork production. It can therefore be concluded that GMAPs that were displayed at Piggery A assisted with the sustainability of Piggery A and also supported Owner-A’s decision-making process regarding the future of the pork production part of the larger farming operation.

Even with the presence of GMAPs in the business, Piggery A was unable to profitably navigate the external factors that impacted the farming operation. These factors - three of the four main factors that Owner-A had considered - were summarised as being: external economic factors in the form of the AGOA Trade Agreement with the USA, which brought low cost pork to the South African market; rivalry amongst competitors with the existence of mega farmers with farming operations using sophisticated and integrated supply chains and an

unparalleled economies of scale, as well as the close to zero growth of South Africa’s economy. These factors lead to internal profitability issues - the fourth main factor - that were aggravated by the opportunity cost of consuming the high quality maize harvested from the farming operation’s maize fields by the piggery, rather than selling it on the market at a profit. The strong presence of GMAPs in Piggery A contributed to the decision-making process as described by Owner-A.

Although the question could be asked as to whether or not Owner-A could have made the decision to discontinue pork production earlier, had GMAPs been actively pursued as best practice, it might not be the correct question to contemplate. More appropriately, the question that has arisen from this case study is whether or not Owner-A would have come to a decision to discontinue pork production in any case, or even nearly as strong as was the case, had GMAPs not been present in Piggery A at all. Perhaps Owner-A would not have done so, or perhaps not in time to avert liquidation of the larger commercial farming operation.

As GMAPs were found in practice in Piggery A - a sole proprietor - supporting its sustainability, it could be generalised that GMAPs would be applicable to more complex business forms such as companies, trusts or closed corporations.

It is therefore recommended, based on the findings of this study, that all commercial farming operations should consider GMAPs as a tool to establish best practice in the support of decision-making that promotes sustainability of farming operations.

Limitations and areas of for future research

The most prominent limitation of this study is based on the inherent limitations of case study research. This study gained an in depth understanding of a specific phenomenon (Nieuwenhuis, 2014), being Piggery A's farming operation.

Piggery A operated as a sole proprietor which could be seen as a basic business form. As such, it could be argued that the findings from this study cannot be generalised across all spectrums and aspects of business in the greater definition of it. However, most commercial farming operations that operate within a sole proprietor business form can use GMAPs as a tool to enhance the quality of the decision-making processes.

Notwithstanding, the argument was previously made that, if a sole proprietor employs principles of GMAPs without prior knowledge, more complex business forms such as companies can consider GMAPs as a tool to establish best practice based on the findings of this study.

Another limitation is that this study relied on the information provided by the owner and professional accountant of Piggery A to evaluate the presence of GMAPs in Piggery A.

This study leaves the following opportunities for further research:

- (i) The evaluation of GMAPs can be extended to mega-farming operations that operate within legal entities such as companies.
- (ii) The diagnostic checklist is designed to cater for corporates with separate management accounting functions. Qualitative research can be conducted to determine possible replacement questions for the parts that focus on matters such as the treasury function or external auditing.
- (iii) The use of a Likert scale when answering the diagnostic checklist can be investigated to add further value to researchers' evaluation of GMAPs, making it possible to determine the extent to which GMAPs contribute towards the sustainability of a farming operation.
- (iv) This study focused on a case where the farming operation had not been aware of the existence of the best practice highlighted by GMAPs. A study can be conducted on farming operations' performance before and after awareness has been cultivated to evaluate the economic contribution that GMAPs bring to the table.

Authors and acknowledgments

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